CLAIMS

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An inspection method for an array substrate, in which said array substrate includes: a substrate; a plurality of gate lines, a plurality of signal lines and a plurality of storage capacitor lines, which are disposed in an electrically nonconductive state on the substrate in the form of matrix; a plurality of switching elements electrically connected respectively to the plurality of gate lines and the plurality of signal lines; and a plurality of storage capacitors electrically connected respectively to said plurality of storage capacitor lines and said plurality of switching elements, said inspection method comprising the steps of:

applying pulse signals from said plurality of storage capacitor lines to said plurality of storage capacitors;

applying pulse signals from said plurality of signal lines to said plurality of storage capacitors via said plurality of switching elements; and

measuring quantities of charges stored in the storage capacitors based on potential differences between said two types of pulse signals.

2. An inspection method for an array substrate, in which said array substrate includes: a substrate; a plurality of gate lines, a plurality of signal lines and a plurality of storage capacitor lines, which are disposed in an electrically nonconductive state on the substrate in the form of matrix; a plurality of switching elements electrically connected respectively to the plurality of gate lines and the plurality of signal lines; and a plurality of storage capacitors electrically connected respectively to said plurality of storage capacitor lines and said plurality of switching elements, said inspection method comprising the steps of:

applying pulse signals from said plurality of storage capacitor lines to said plurality of storage capacitors; and

measuring quantities of charges stored in the storage capacitors based on potential differences between said pulse signals.

3. The inspection method for an array substrate according to claim 1, wherein the pulse signals applied from said plurality of storage capacitor lines to said plurality of storage capacitors and the pulse signals applied from said plurality of signal lines to said plurality of storage capacitors via said plurality of switching elements are simultaneously applied to said plurality of storage capacitors.

4. The inspection method for an array substrate according to claim 3, wherein the pulse signals applied from said plurality of storage capacitor lines to said plurality of storage capacitors and the pulse signals applied from said plurality of signal lines to said plurality of storage capacitors via said plurality of switching elements have pulse rising times different from each other.

5. The inspection method for an array substrate according to Claim 1, wherein the pulse rising times of the pulse signals applied from said plurality of storage capacitor lines to said plurality of storage capacitors are respectively different in said plurality of storage capacitors.

6. The inspection method for an array substrate according to Claim 2, wherein the pulse rising times of the pulse signals applied from said plurality of storage capacitor lines to said plurality of storage capacitors are respectively different in said plurality of storage capacitor

7. The inspection method for an array substrate according to Claim 1, wherein in said measuring step, the quantity of charges stored in one storage capacitor among said plurality of storage capacitors electrically connected to said storage capacitor lines is measured.

8. The inspection method for an array substrate according to Claim 7, wherein measuring of the quantity of charges stored in said one storage capacitor is performed for all of said plurality of storage capacitor lines.

9. The inspection method for an array substrate according to Claim 2, wherein in said measuring step, the quantity of charges stored in one storage capacitor among said plurality of storage capacitors electrically connected to said storage capacitor lines is measured.

10. The inspection method for an array substrate according to Claim 9, wherein measuring of the quantity of charges stored in said one storage capacitor is performed for all of said plurality of storage capacitor lines.

11. The inspection method for an array substrate according to Claim 1, wherein in said measuring step, the quantities of charges stored in said plurality of storage capacitors connected to said signal lines via said plurality of switching elements are measured.

12. The inspection method for an array substrate according to Claim 2, wherein in said measuring step, the quantities of charges stored in said plurality of storage capacitors connected to said signal lines via said plurality of switching elements are measured.

13. An inspection device for an array substrate, in which said substrate includes: a substrate; a plurality of gate lines, a plurality of signal lines and a plurality of storage capacitor lines, which are disposed in an electrically nonconductive state on the substrate in the form of matrix; a plurality of switching elements electrically connected respectively to the plurality of gate lines and the plurality of signal lines; and a plurality of storage capacitors electrically connected respectively to said plurality of storage capacitor lines and said plurality of switching elements, said inspection device comprising:

a pulse signal generating device connected to said storage capacitor lines and said signal lines in order to apply the pulse signals respectively to said plurality of storage capacitors; and

a circuit for measuring the quantities of charges stored in said respective storage capacitors.

14. An inspection device for an array substrate, in which said array substrate includes: a substrate; a plurality of gate lines, a plurality of signal lines and a plurality of storage capacitor lines, which are disposed in an electrically nonconductive state on the substrate in the form of matrix; a plurality of switching elements that are electrically connected to each of the plurality of gate lines and each of the plurality of signal lines; and a plurality of storage capacitors electrically connected respectively to said plurality of storage capacitor lines and said plurality of switching elements, said inspection device comprising:

a pulse signal generating device connected to said storage capacitor lines in order to apply the pulse signals respectively to said plurality of storage capacitors; and

a circuit for measuring the quantities of charges stored in said respective storage capacitors.

15. The inspection device for an array substrate according to claim 13, wherein said circuit for measuring the quantities of charges stored in said storage capacitors is connected to said signal lines

16. The inspection device for an array substrate according to claim 14, wherein said circuit for measuring the quantities of charges stored in said storage capacitors is connected to said signal lines.